

ABSTRACT OF THE DISCLOSURE

To reduce vibration caused by an unbalance of magnetic force generated in a motor portion due to run-out of a rotor in a magnetic bearing apparatus having the motor portion. The vibration of the rotor is detected by means of a radial direction sensor mounted for controlling a magnetic bearing. Then, the vibration in the motor portion is inferred from the run-out of the rotor detected by the radial direction sensor by using the geometric positional relationship between the rotor and the radial direction sensor. The relationship between the unbalance amount of the magnetic force and the amount of run-out of the rotor in the motor portion is formed into the database through experiments or simulation in advance, and the unbalance amount of magnetic force is obtained from this database. Then, the magnetic force resisting the unbalance amount of this magnetic force is generated to offset this unbalance amount.